

New Momentum in District Energy

John F. (Jack) Kattner
Director

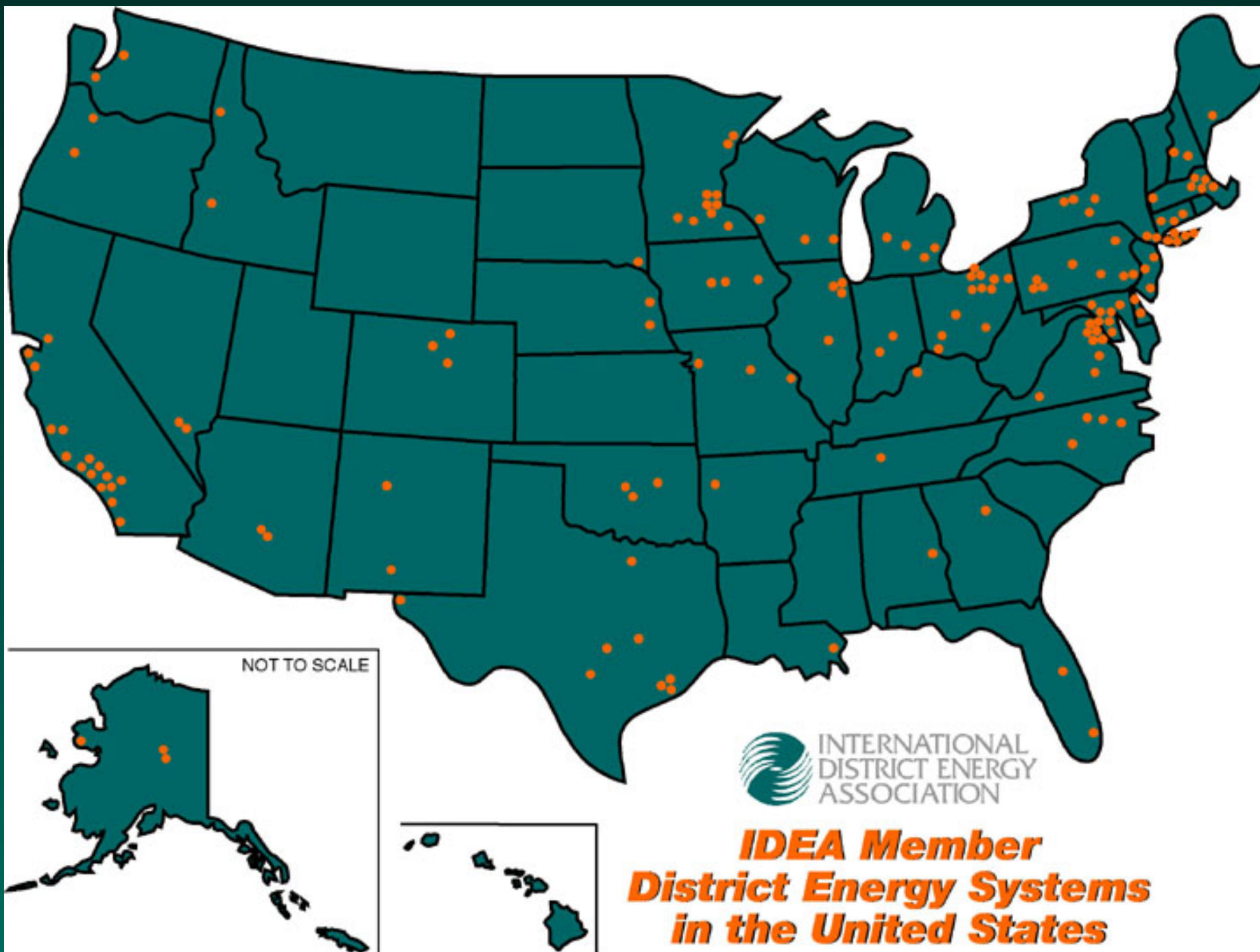


Technology Assessment

Honolulu, HI
March 19-20, 2003

IDEA – Industry Association

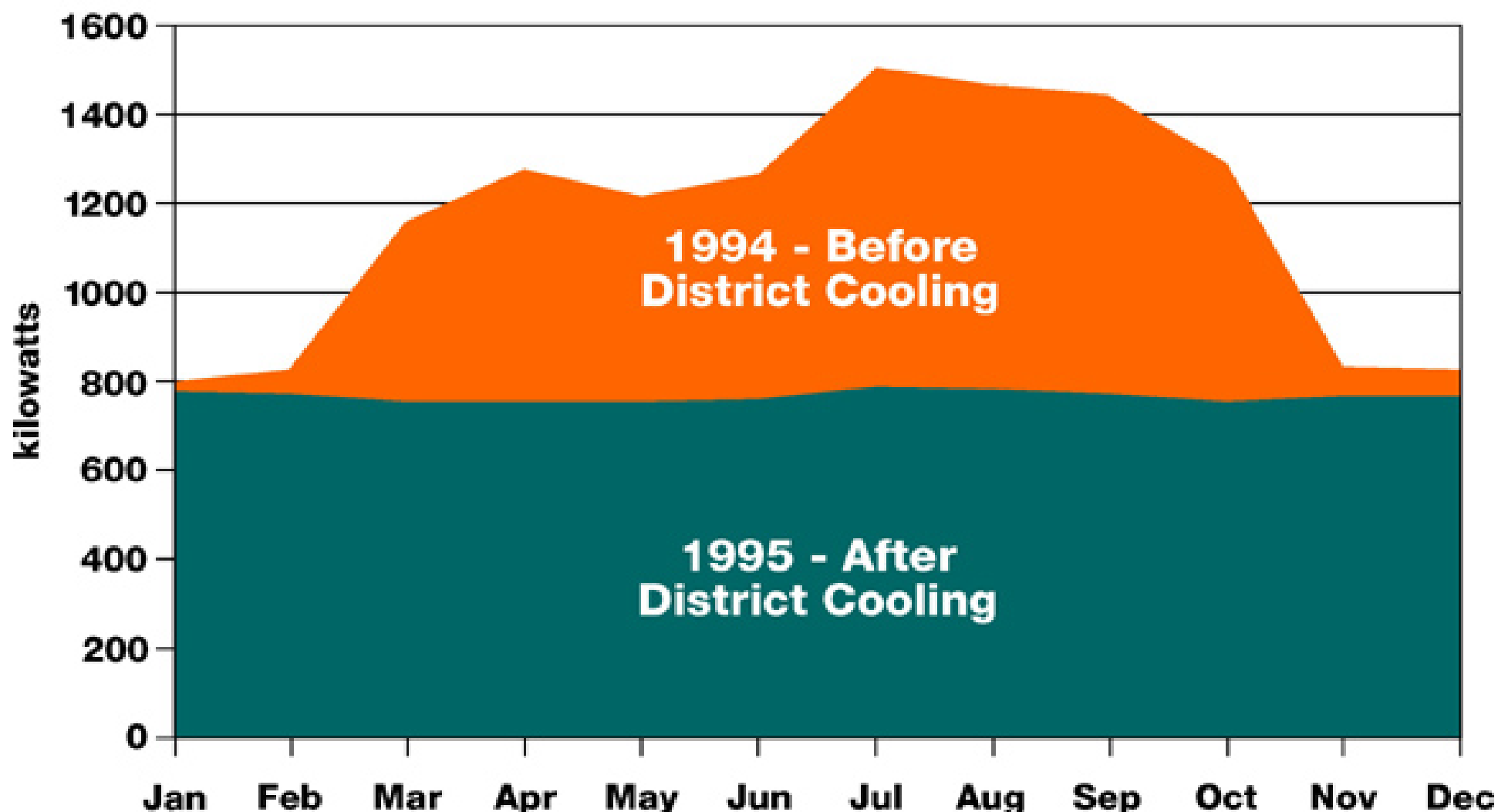
- **Founded in 1909**
- **Over 920 members from 20 countries**
- **Diverse membership - Utilities, universities, suppliers, manufacturers, consultants**
- **Peer exchange, promote and advocate**
- **94th Annual Conference in Philadelphia, 2003**
- **Membership grew by over 10% in 2002**
- **Timely mission - Energy efficiency benefits the environment**



Benefits of District Energy to Customers

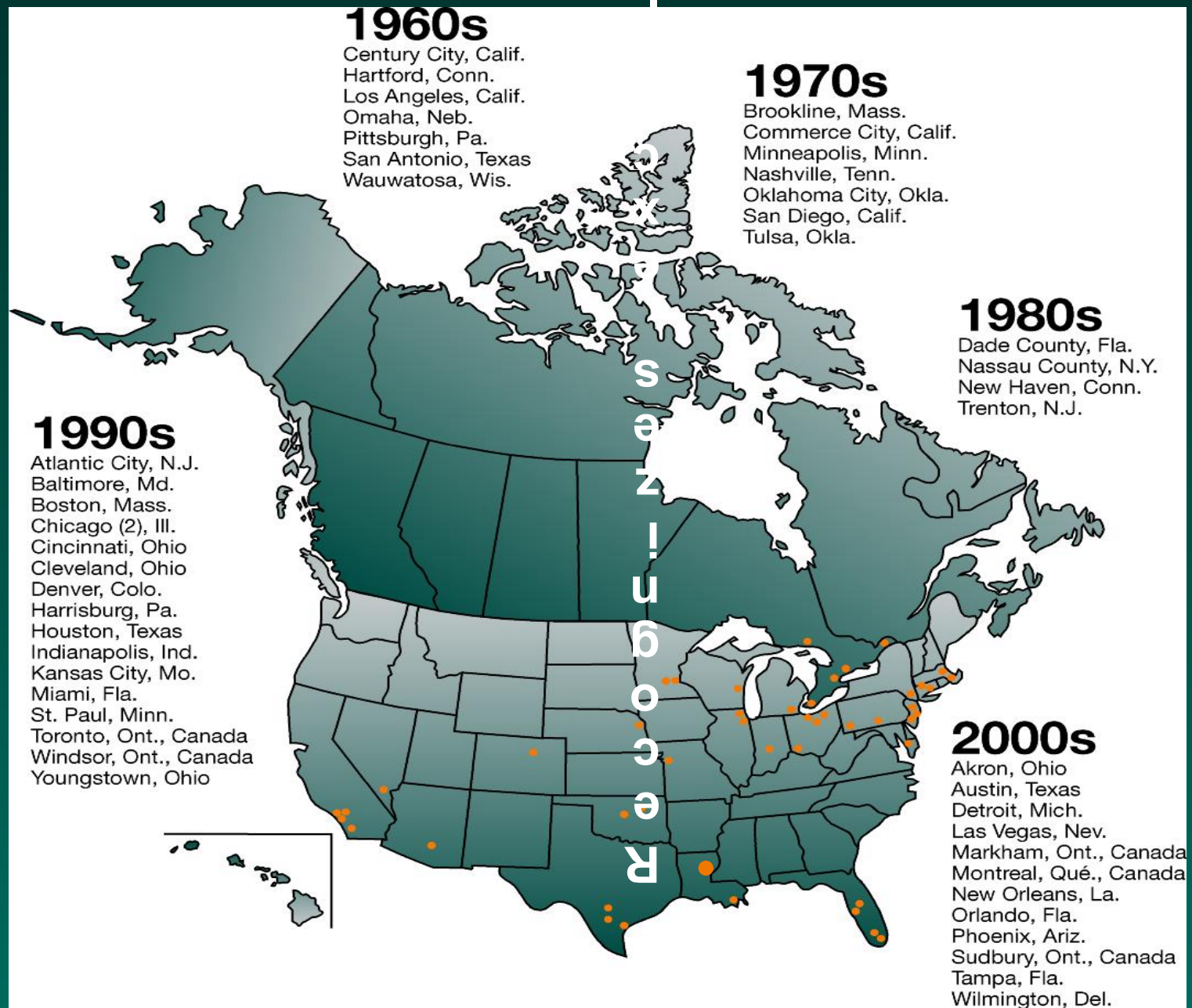
- **Eliminates capital costs and reclaims space for boilers, chillers, cooling towers, ancillaries**
- **Reduced risks (capital and operating)**
- **Improved reliability, flexibility and convenience**
- **Service compares favorably with costs for equipment, fuels, electricity, operation and maintenance**
- **Clips peak electric demand; flattens power purchasing profile**

District Cooling Customer Electric Demand Profile



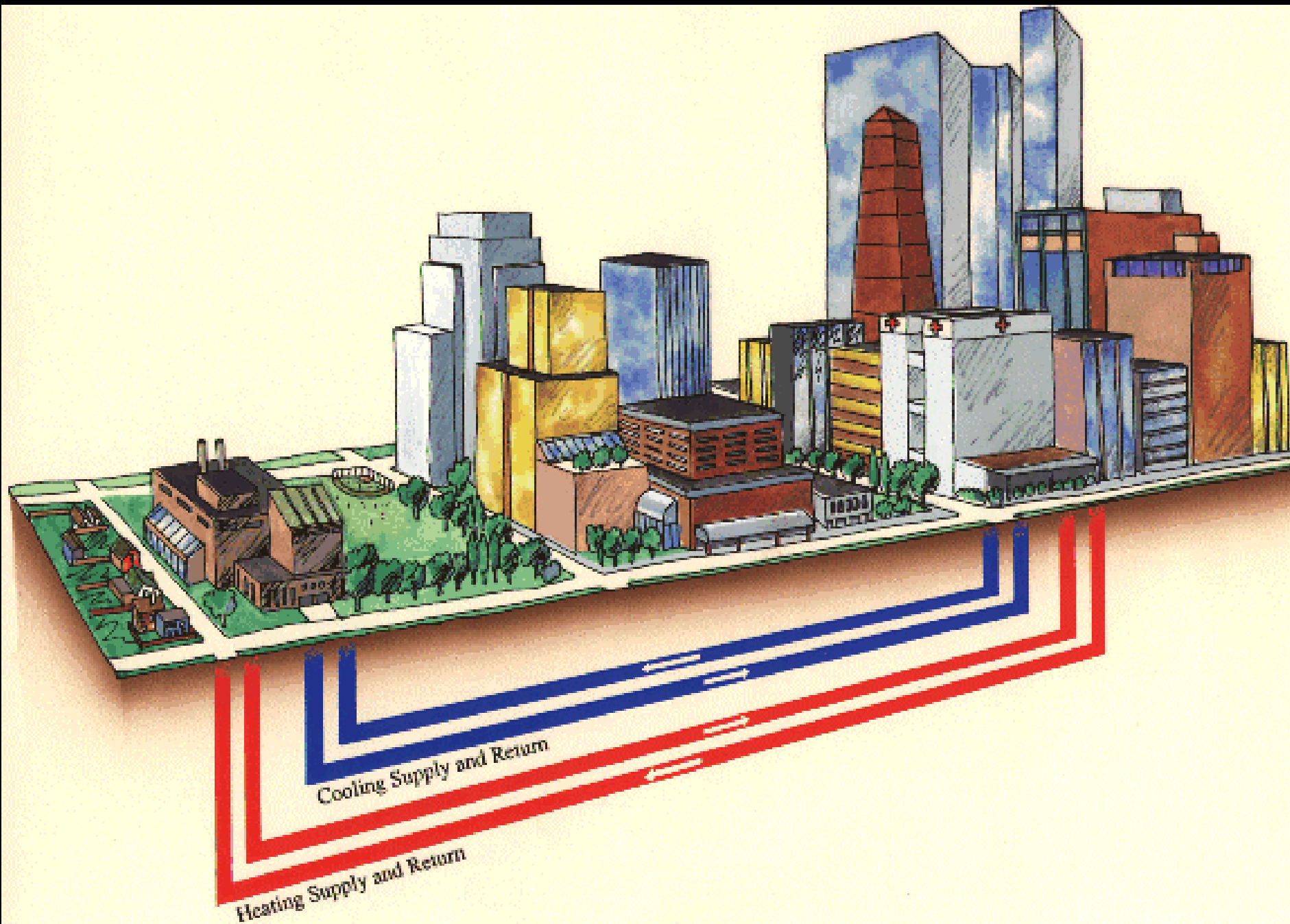
350,000 sf commercial office building built in 1965. Located in Cleveland. Two electric chillers displaced. Actual peak meter readings varied just 2% Jan-Jul.

Map of Cooling Systems



What are Emerging Drivers?

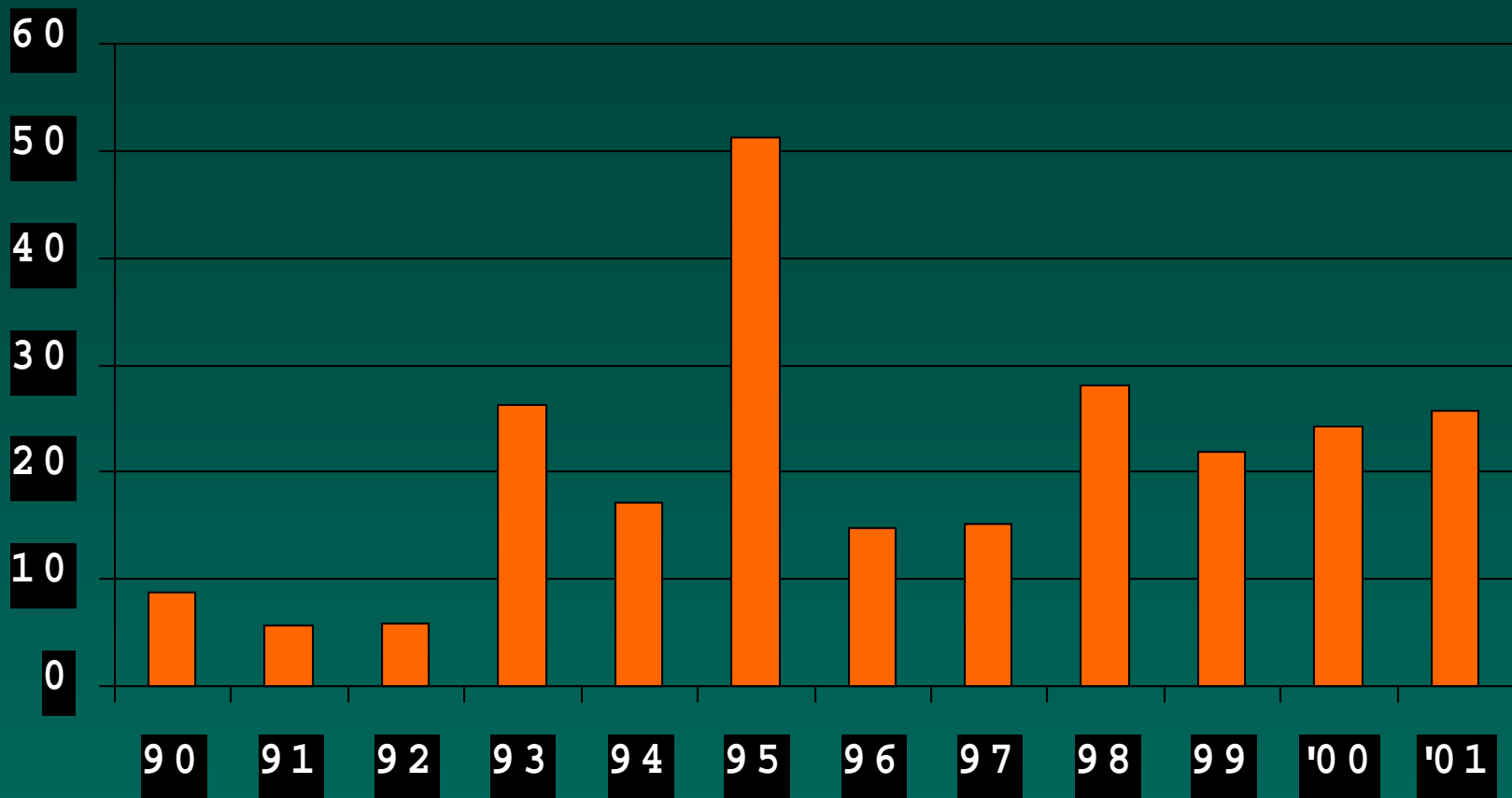
- District energy/CHP solves energy problems and delivers environmental benefits
- Steam-based and district cooling use accelerating with peak power cost increase
- Fuel cost spike driving new market share
- CHP (cogeneration) and TES (thermal energy storage) to balance downtown electric grid
- City-wide thermal sink allows distributed generation options
- Existing district energy assets key to DOE Goal to double US CHP by 2010



District Energy Space

Million Sq Ft Customer Space Added

Total Reported = 225,258,285 Sq Ft





Spotlighting
Industry
Growth

District Energy Space '01

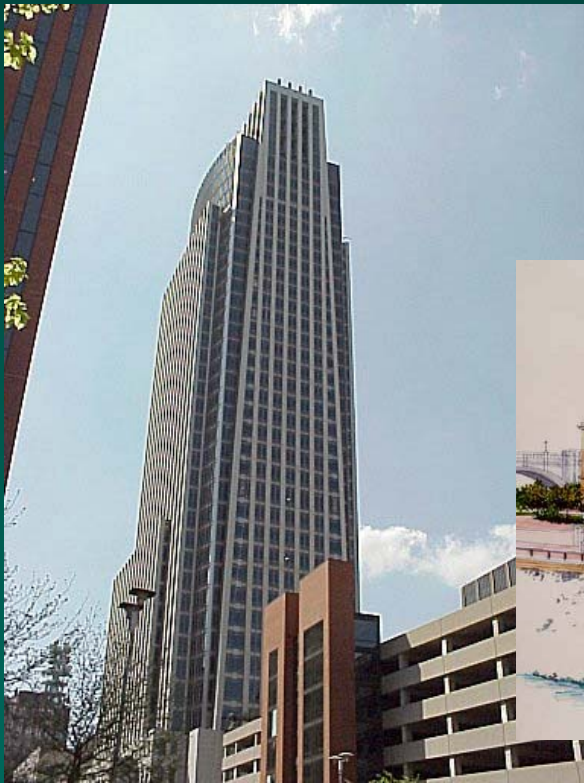
More than 28.5 million
square feet reported

28,597,873 square feet 2001

- **225,258,285 sq ft reported in District Energy Space since 1990**

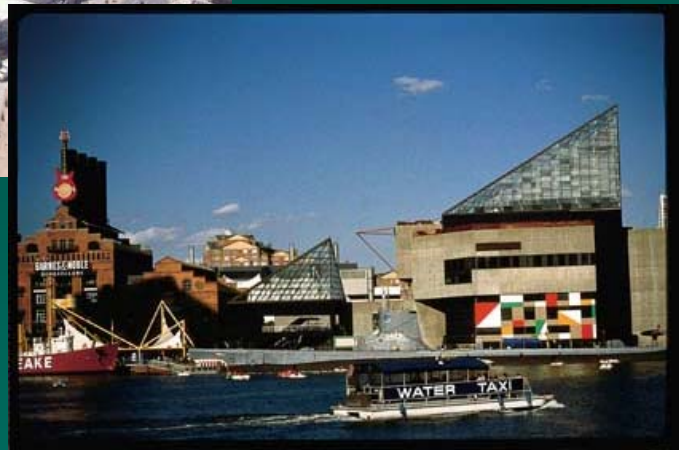
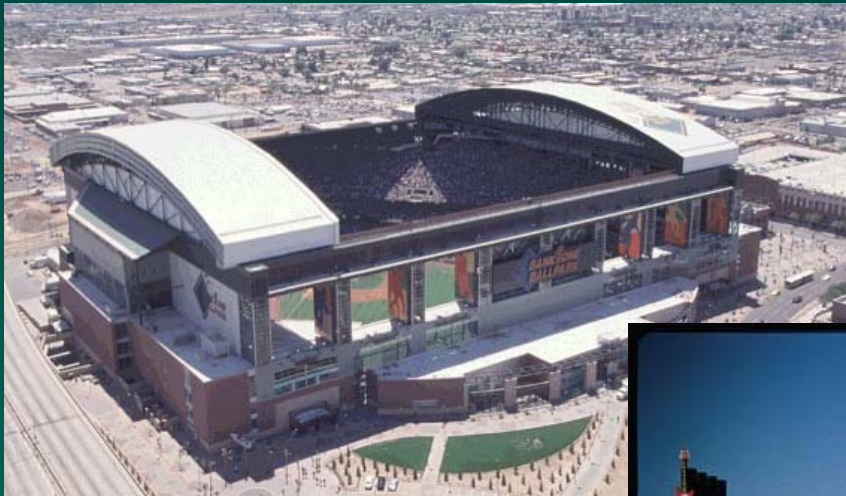
Commercial office

- 15 for 4,459,388 sq ft



Entertainment/ cultural/sporting

- 10 for 10,272,300 sq ft



Hotel

- 9 for 1,477,900



Other

- 8 for 1,241,679 sq ft



Residential

- 8 for 2,998,725 sq ft



Commercial retailmanufacturing

- 6 for 2,838,500 sq ft



School/hospital/institution

- 5 for 832,497 sq ft



President Bush Briefing

- District Energy St. Paul plant tour before National Energy Plan Announcement
- District energy industry in place to “*Act now*” on efficiency, reliability and economic objectives of National Energy Plan
- Landmark customers include White House, US Capitol, Empire State Building, Harvard, Yale and Michigan State

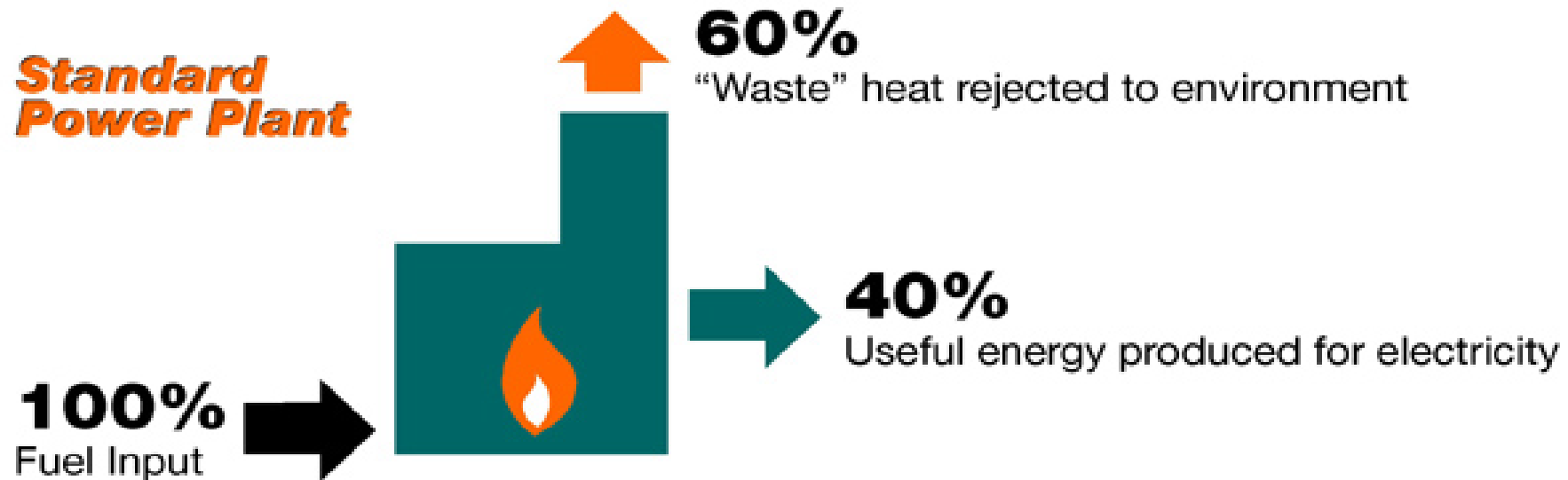




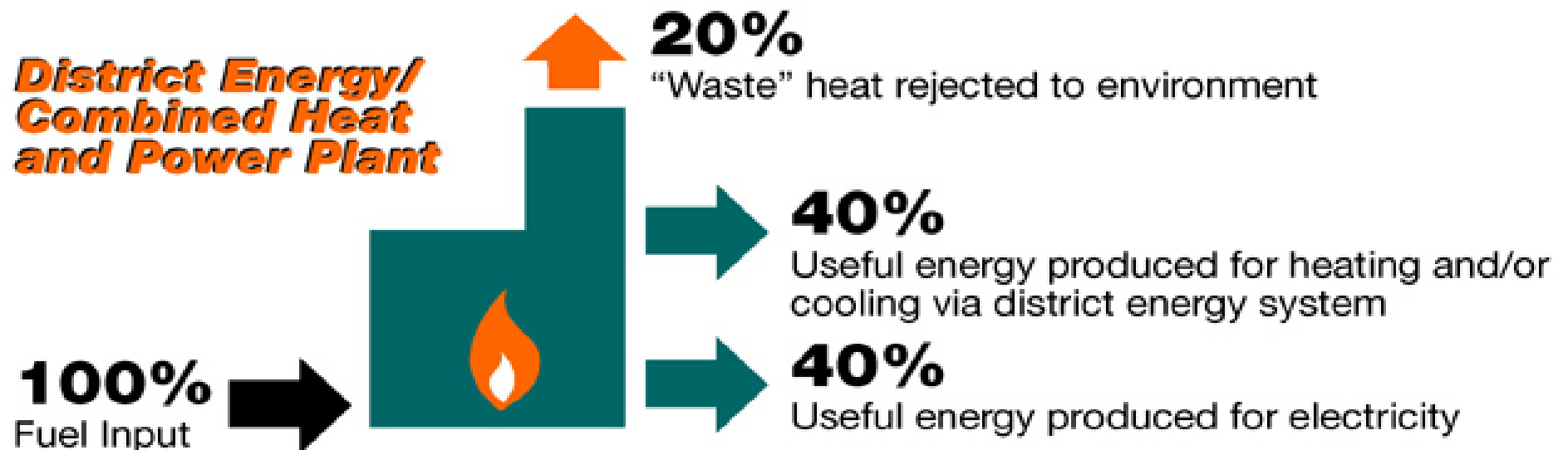


Energy-Efficiency Comparisons

Standard Power Plant



District Energy/ Combined Heat and Power Plant



What is District Cooling?

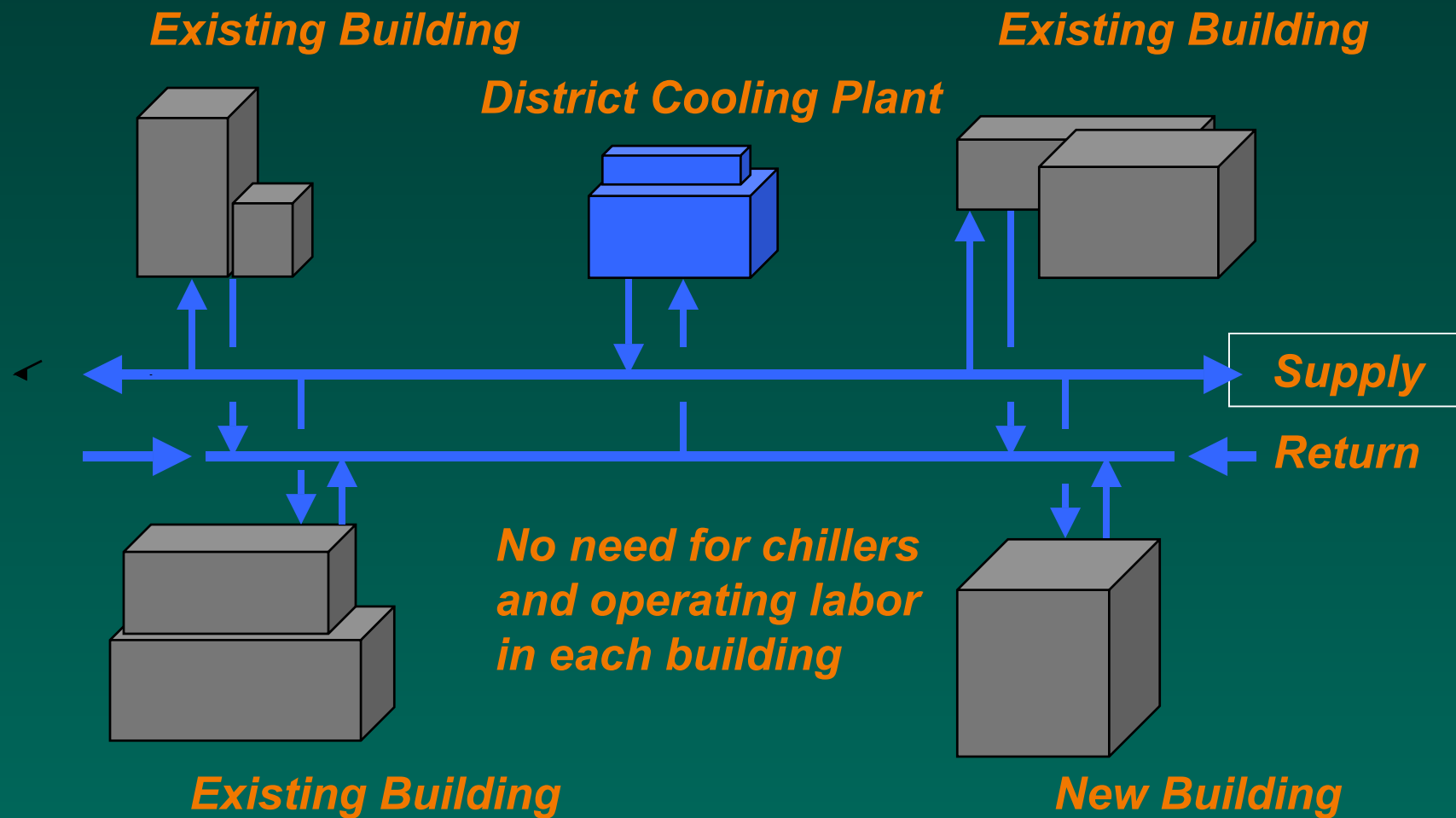
- *Centrally-supplied chilled water*
 - *Available 24 hours/day, 365 days/year*
 - *Totally meets building owner needs*
- *Environmentally sound solution*
 - *Eliminates building cooling plant CFCs, emissions, noise, plume*
 - *Reduces ozone depletion and global warming*
 - *Improves cooling efficiency*
- ***Easy Building Syndrome!!***



What is District Cooling?

- *Reliable service*
 - *Proven, dependable technology*
 - *Interruptions virtually non-existent*
 - *40 North American commercial systems*
 - *2000 North American institutional systems*
 - *Also in Europe and Asia*
- *Growth industry*
 - *Growth rate of at least 15% annually*
 - *Most growth since 1990*
- *Catalyst for economic development*
 - *More competitive CBD*
 - *Bring jobs to the CBD*

What is District Cooling?

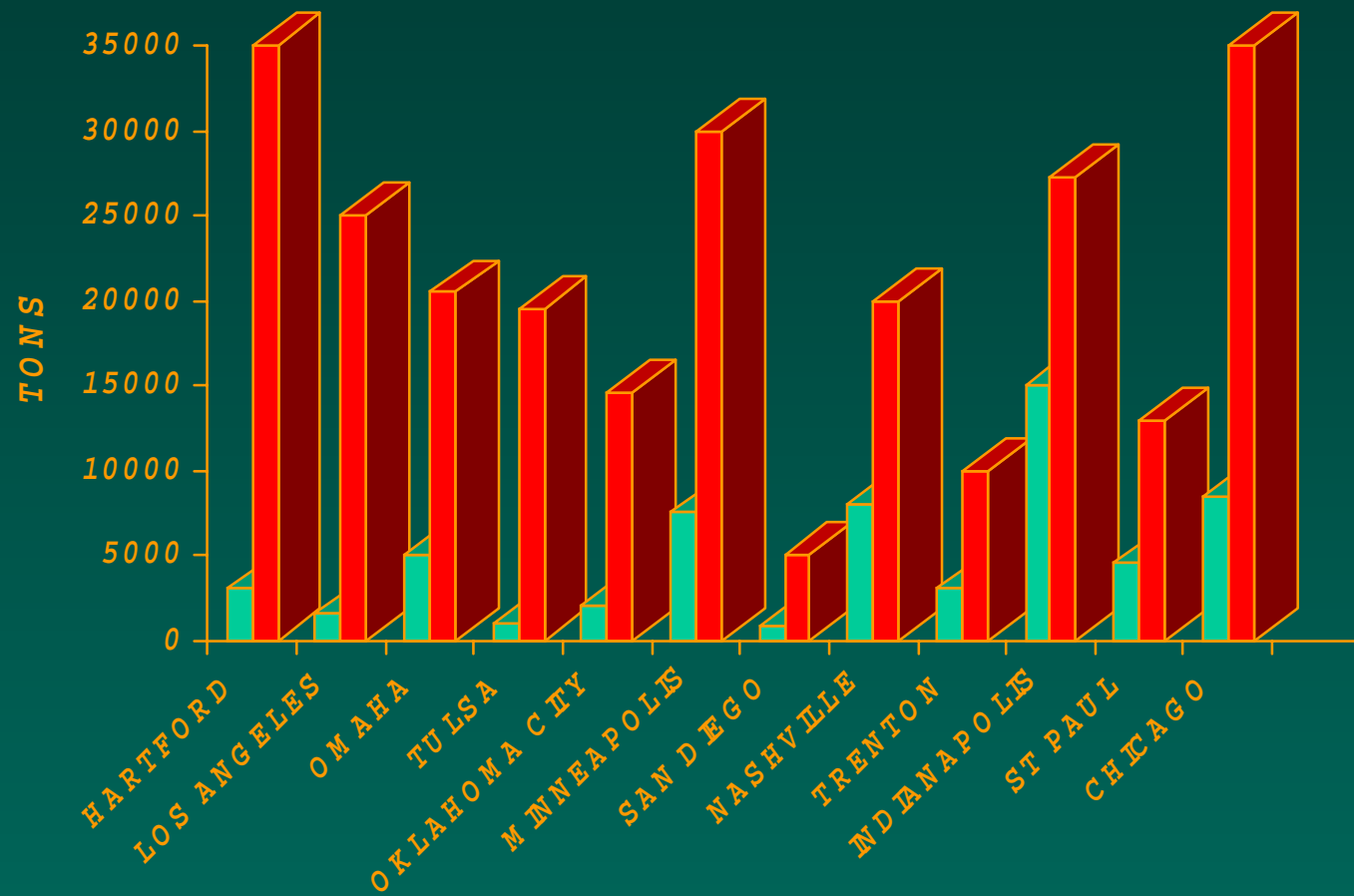


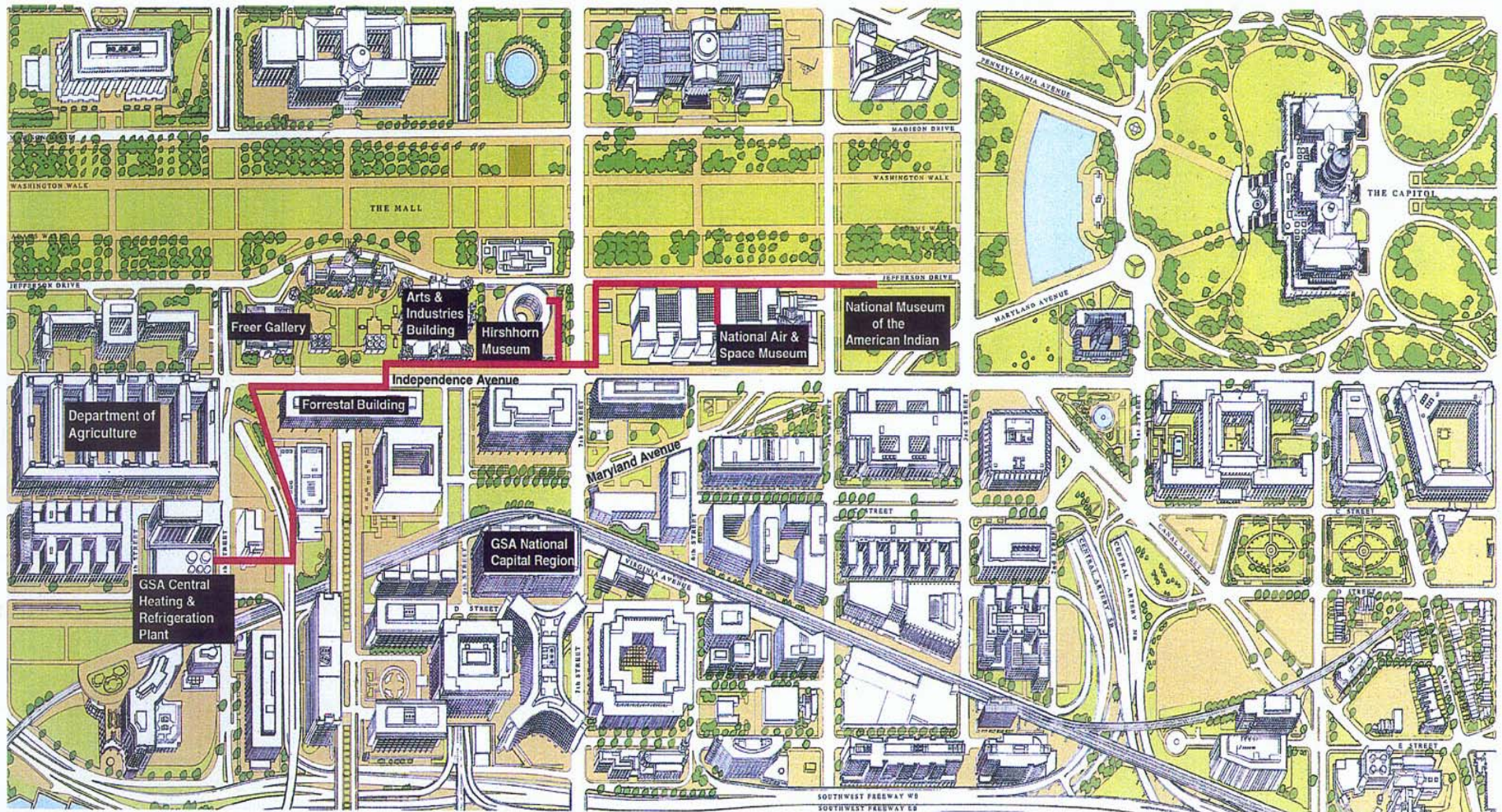
District Cooling Development Options

- *Utilities*
 - *Electric*
 - *Gas*
- *Municipalities*
 - *Municipal utilities*
 - *Not-for-profit development companies*
- *Independents*
 - *Entrepreneurial energy companies*
 - *Customer cooperatives*
- *Hybrids of above*



District Cooling Growth





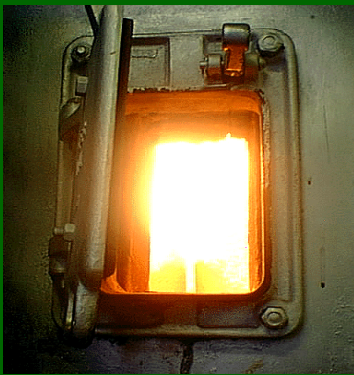
Chilled Water Distribution System GSA Cogeneration and Chiller Plant Expansion Project

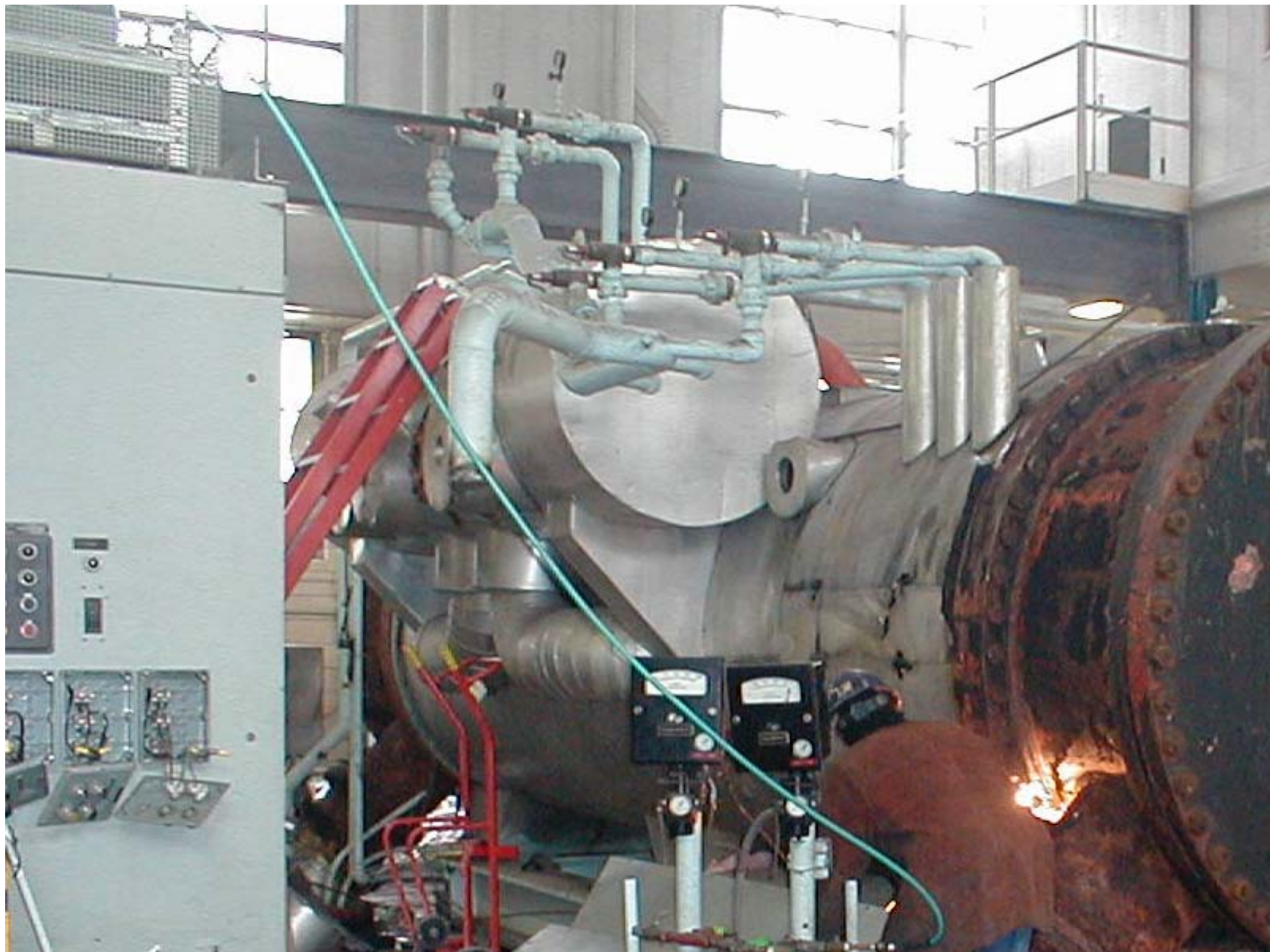
Joseph Passonneau & Partners
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Chilled water distribution lines

Co-generation & Refrigeration Plant Modernization

GSA, Heating Operation & Transmission District - Energy since 1933



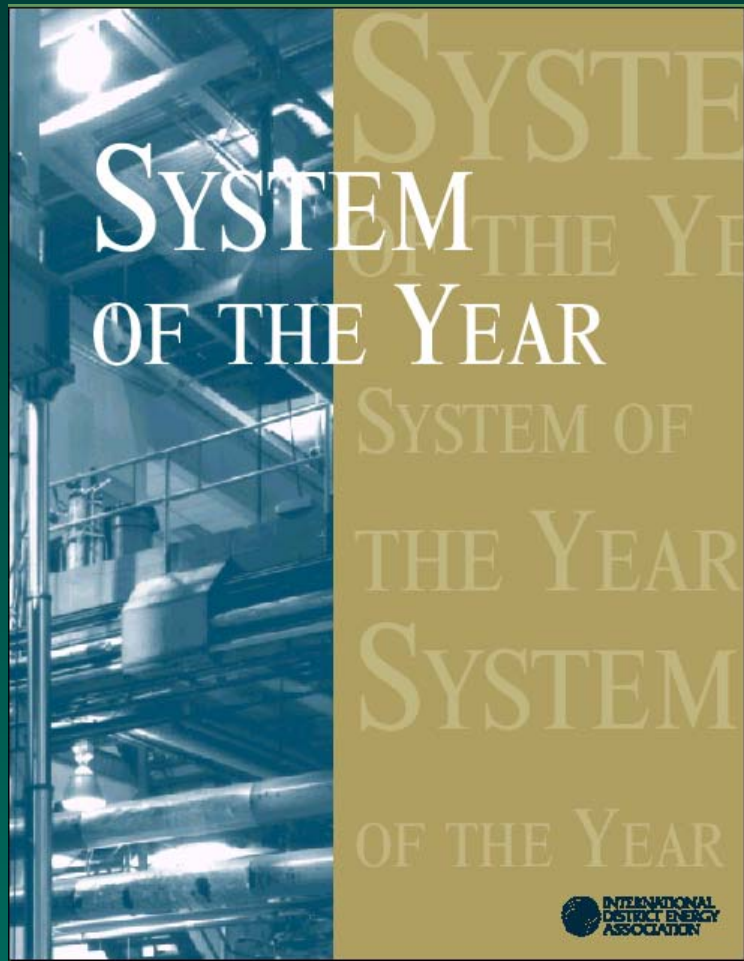








System of the Year Award

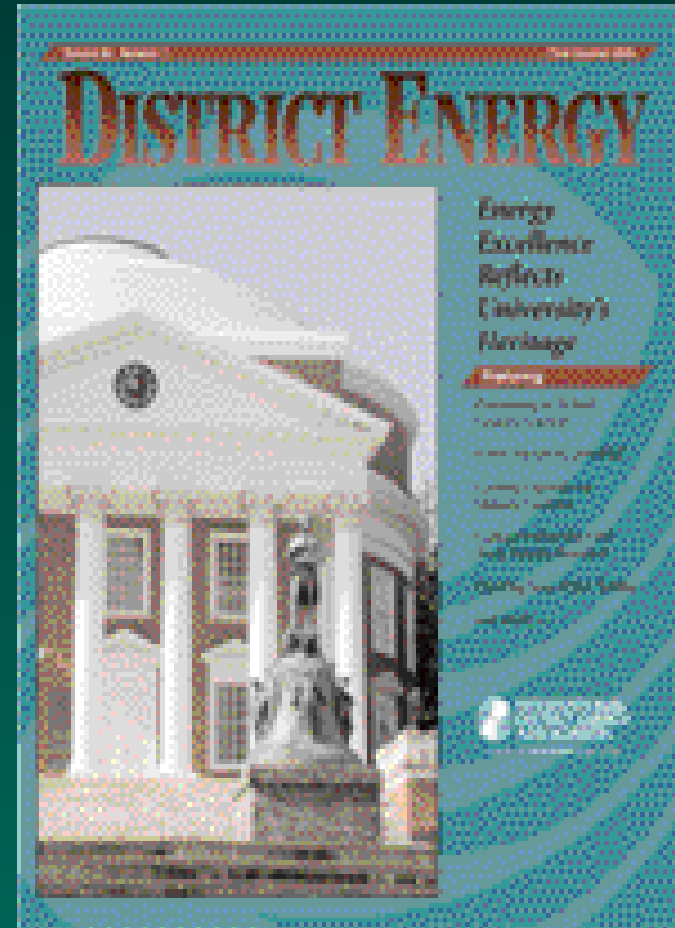


- **Presented at Annual Conference Awards**
- **Recognizes excellence**
- **Stimulates employee pride; local media**
- **Distinguished list of 10 winners:**
 - District Energy St. Paul
 - Con Ed Steam System
 - Energy Systems Omaha
 - Cornell University
 - UCLA...

Industry magazine

District Energy magazine

- Circulation – 3300
- High quality, long shelf life
- Submit an article, order reprints, be “published”
- Write a regular column-
“Members Speak Out”
- Editorial calendar on web



Industry newsletter

November/December 2001


District Energy

The Official Newsletter of the International District Energy Association Volume 17 Number 6

Now

MARK YOUR CALENDARS

DISTRICT ENERGY/CHP 2002 - BALTIMORE!



DISTRICT ENERGY/CHP 2002 - ANCHORS AWEIGH — IDEA's 93rd Annual Conference and Trade Show is scheduled for June 22-25, 2002 in beautiful Baltimore, Maryland.


This conference and trade show is the premier industry event devoted entirely to district energy and combined heat and power. For 93 years, the IDEA Annual Conference has been attracting industry leaders with presentations on technical innovations, operations management discussions and panels on policy and program initiatives. System owners interact with manufacturers, service providers and consultants to advance the needs of the industry. This year, IDEA will convene at the Wyndham Baltimore Inner Harbor Hotel, only a few blocks from Baltimore's renowned Inner Harbor.

If you are interested in making a presentation, please submit an abstract by December 10, 2001 for consideration on the following topics:

- Case Studies of Central Plants
- Combined Heat and Power (CHP)
- Design & System Expansion
- Controls and Energy Information Management
- District Cooling
- Distributed Generation
- Fuel & Power Procurement
- Safety & Operations

Abstracts should be submitted to Conference Technical Chairperson: Bob Smith of RMF Engineering Inc. (410) 576-0505 or e-mail: rdsmith@rmf.com.

The conference is being hosted by two IDEA member systems in Baltimore - Comfort Link and Trigen Energy Baltimore.



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District Energy Now

- Designed for IDEA members
- “Inside the industry” news
- Report on events, projects, careers
- Distributed via broadcast e-mail and posted on web

Thank You!

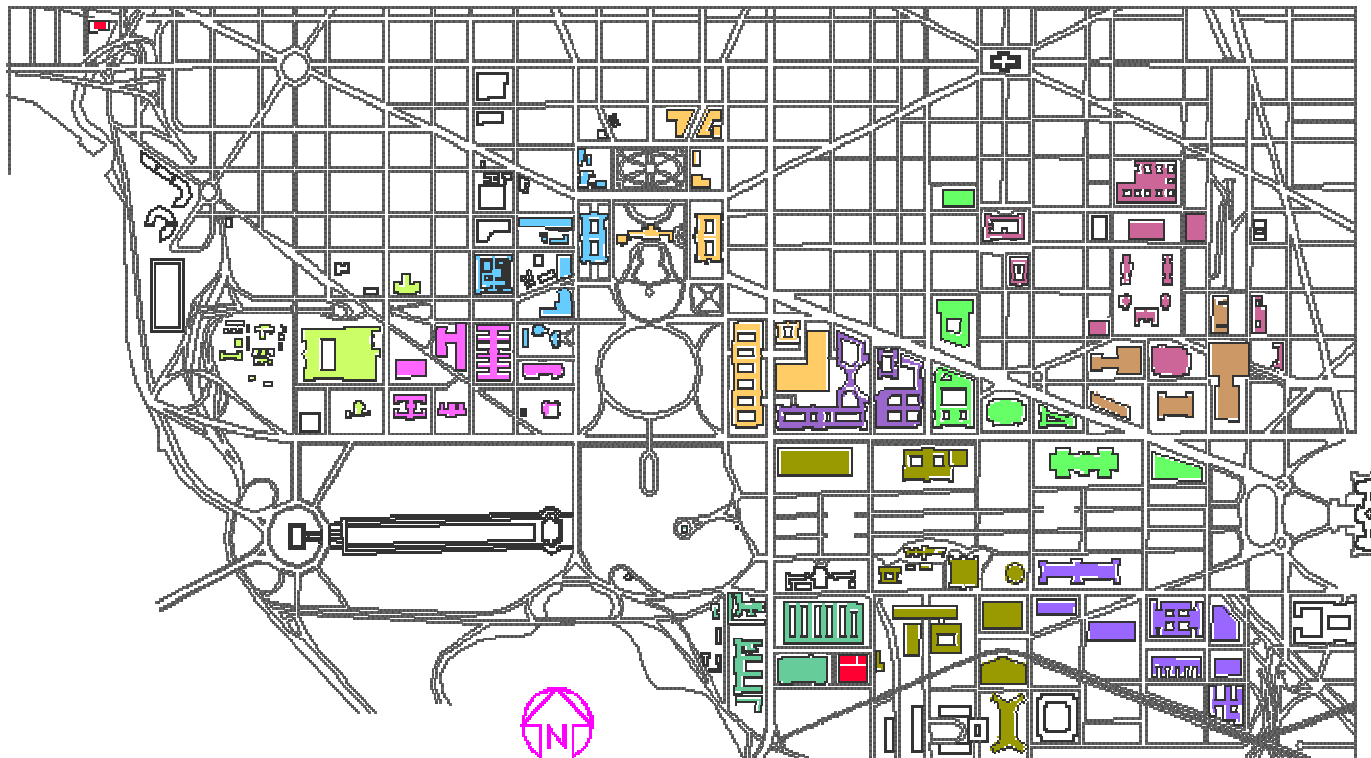
Any Questions?

www.districtenergy.org

**IDEA 94th Annual
Conference and Trade Show
Philadelphia, PA
June 22-25, 2003**

Co-generation & Refrigeration Plant Modernization

GSA, Heating Operation & Transmission District - Energy since 1933



GSA — NATIONAL CAPITAL REGION STEAM DISTRIBUTION SYSTEM

SCALE: 1" = 200'-0"





**Washington
Gas**

Co-generation & Refrigeration Plant Modernization



The Washington Post

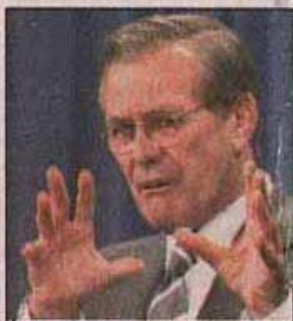
FRIDAY, MAY 18, 2001

HOME
EDITION

Inside: Weekend
Today's Contents on Page A2

25¢

Prices may vary in areas outside metropolitan
Washington. (See list on Page A2)



BY SHAWN THEW—AGENCE FRANCE PRESSE

Defense Secretary Donald H. Rumsfeld has 20 review panels.

which he emphasized that he will include the military and Congress in his future deliberations, Rumsfeld also said:

■ He is "pushing" to get U.S. peacekeepers out of Bosnia in the belief that the military mission is finished there.

■ He may abandon the principle that the military must be prepared to fight two major regional wars simultaneously, a yardstick that for a decade has been used to determine the size and readiness of U.S. forces.

■ There have been "institutional" frictions between the Pentagon and the State Department, but he has good personal relations with Secretary of State Colin L. Powell.

Discussing possible changes in personnel policy, Rumsfeld said

See RUMSFELD, A23, Col. 5

Panel Splits Nomination

Bush Issues Energy Warning

President Unveils New Policy, to Praise and Attacks on Party Lines

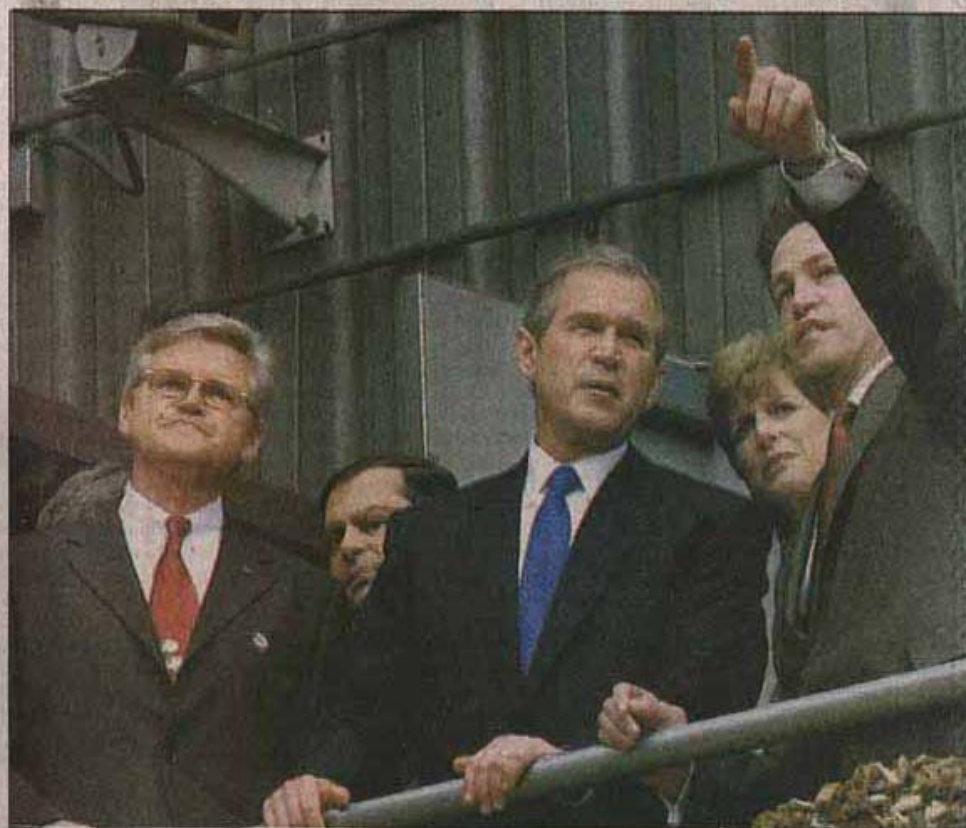
By MIKE ALLEN
and DANA MILBANK
Washington Post Staff Writers

ST. PAUL, Minn., May 17—President Bush unveiled his much-anticipated energy policy to the nation today from the banks of the Mississippi River, warning of widespread misery if Congress resists his plan to increase the country's power production.

Bush flew to a convention center here to announce his proposals after four months of deliberations, winning acclaim from Republicans and the energy industry, which stands to make billions of dollars from his ideas, and complaints from Democrats and environmentalists, who hope to exploit the policy as a way to portray the president—a former Texas oilman—as a captive of industry.

"If we fail to act, Americans will face more, and more widespread, blackouts," Bush said. "America cannot allow that to be our future, and we will not." The president, adding a tone of urgency to his long-term proposals, said a future without new sources of energy "is unfortunately being previewed in rising prices at the gas pump and rolling blackouts in the great state of California."

In California, Gov. Gray Davis (D) accused the administration of "turning a blind eye to the bleeding and hemorrhaging that exists in this state." He excoriated Bush for refusing to can wholesale energy prices.

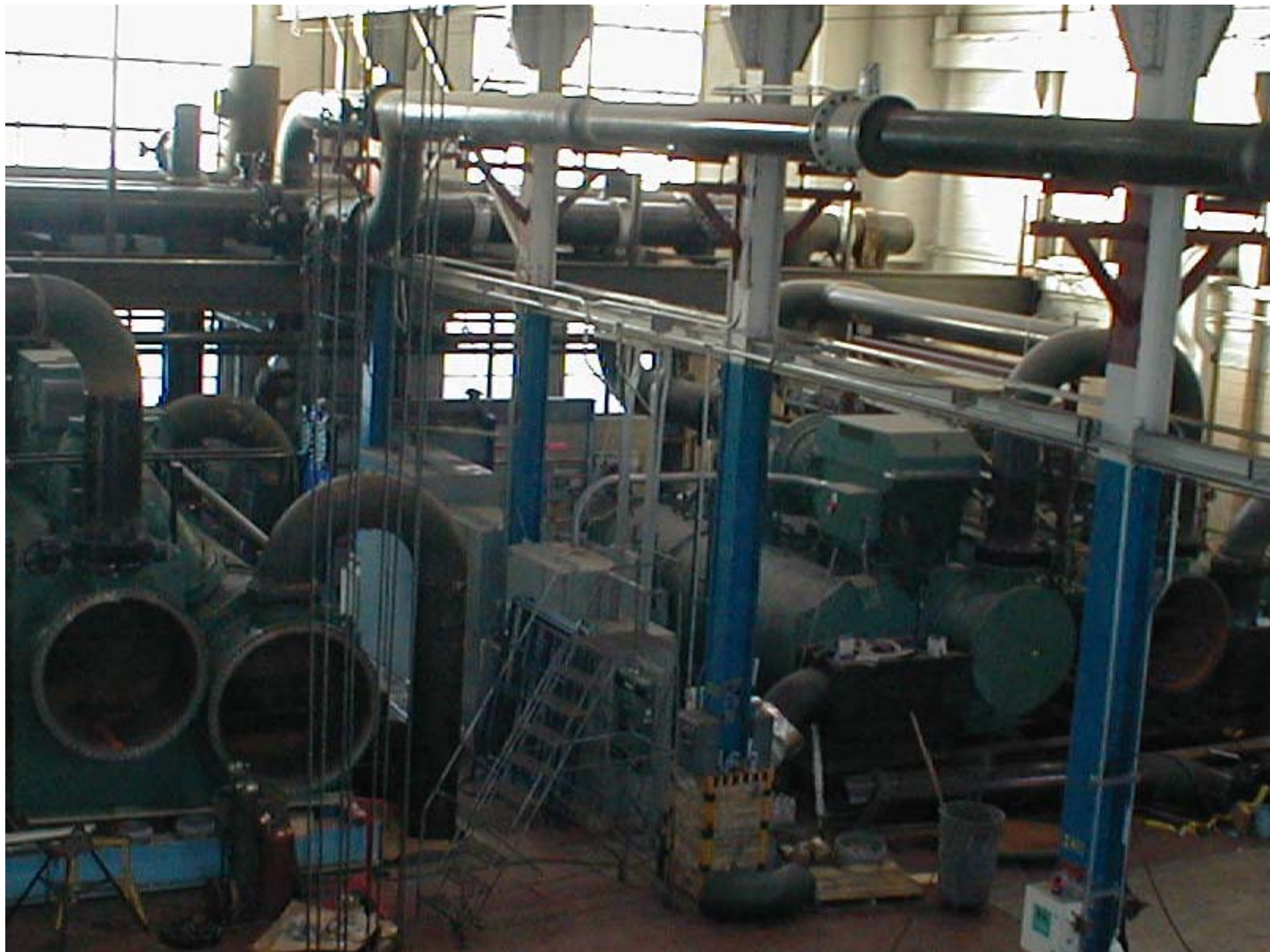


BY PAUL J. RICHARDS—AGENCE FRANCE PRESSE

President Bush visits St. Paul, Minn., power plant that uses wood chips. With him are District Energy president Anders Rydaker, left, Energy Secretary Spencer Abraham, EPA chief Christine Todd Whitman and Mayor Norm Coleman.

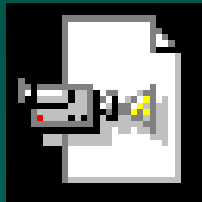
the full 170-page report, which pro... more oil, gas and nuclear production... 1,300 to 1,900 new power plants



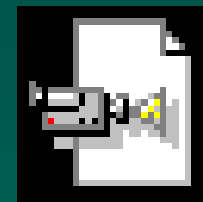


District Energy in Prime Time

- Energy was front page news
- Rollout event for first major policy address
- On radar screen of the Administration



Video - Jim Lehrer

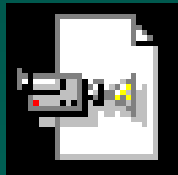


President's Speech
Video

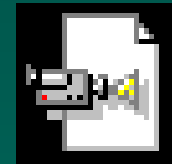
District Energy in Prime Time

- ***“I had an early look at the future this morning... I toured a plant that harnesses the best of new technology to produce energy that is cleaner, and more efficient, and more affordable”.***
- ***“A model of energy efficiency...energy diversity, and the plant is a model of affordability...”***

***President George W. Bush
May 17, 2001***



**CBS/Bob McNamara
Video**



KSTP Video